NORTHRUP EXHIBIT P

Cont

Results

M. Allen

Notes (signal bank of several (not all) results photos with this pen (often (on front) was ~~non~~ permanent ink)

- PCR (HIV - MSP) worked well in integrated-heater devices, gel electrophoresis verified product some, but minimal Primer Dimer (esp due to known fact that device reaction mixture cycled 1-2 times, then at R.T. for ½ hr & prior to 20 cycles due to need to re-solder connections - new rxn mixture (30µl) was added)

- was able to extract ~ 100% of aqueous phase with 200 µl (set at 30 µl) pipette & load 5-6 wells of electrophoresis channel

(*) → calculate power consumed in todays experiment compare to batteries

Other Discussion

last Tues w/ Ray Manilla Lee (Calres) along w/ Russ Higuchi, Bob Watson, Russ's technician, myself we tried homogeneous detection w/ video CCD over 460 thermal cycles

- pulsed N_2 - laser (ILEE Laser company, Switz) was tried

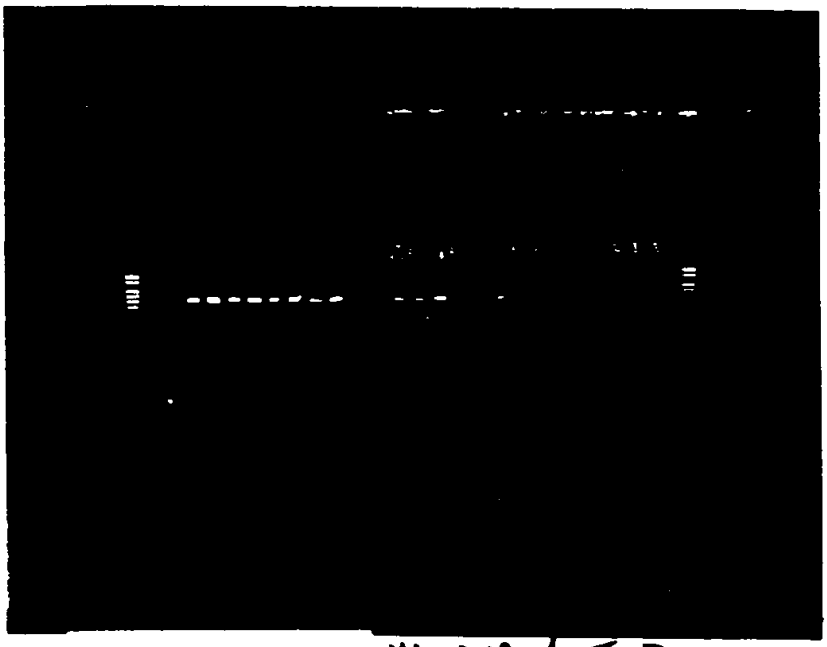
→ See LLNL Book (notebook) for details

Cont

Results (photos)
Devia PCR results positive

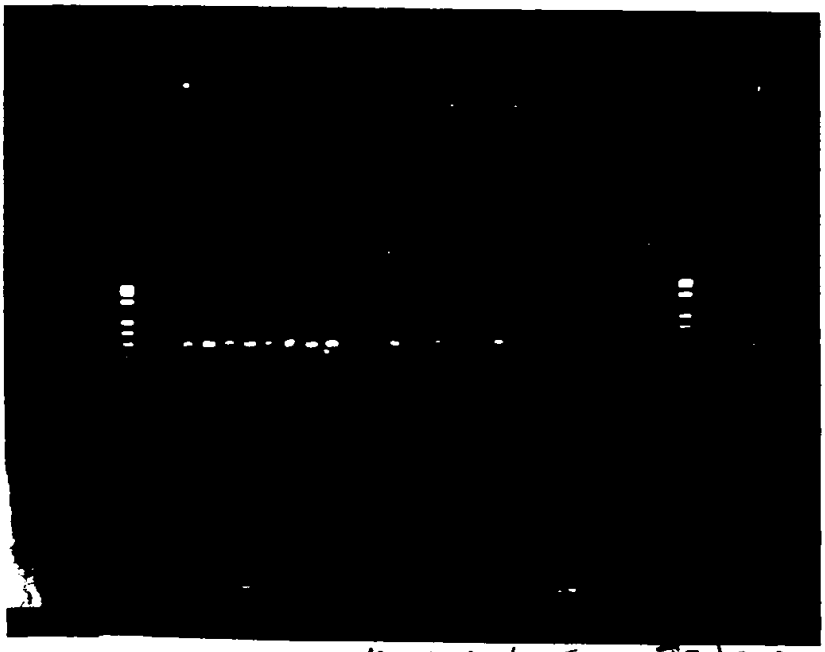
M. Allen

elec. T = 15 min



M. Allen T = 2 hr 4.6 >200

elec T = 40 min



M. Allen T = 1 hr 2 >200

taped recipe from Watson

Rxn per R. Watson	50 µl 10× RM	2
	50 µl 1mM dNTP	3
	50 µl MilliQ	4
M. Allhoff	10 µl 10×10 = 100 pmoles primer	5
	10 µl primer	6
	2½ µl (10×1.75 U/rxn 12.5 / 5 U/µl = 2.5) Taq	7
	327.5 µl H_2O	9
	500	

θ Celus M. Allen

Tiny new PCR system
(more Temp. forgiving)

142 bp product target on ss M13 from gag- region of HIV

1) Starting target = 10^8 copies in 5 µl
T = 96-55 ↓ 16-18 cycles
(works at 88+) is plenty

2) primers

old names:		new names	
SK 145	=	ph 07	10 pM/µl
SK 431	=	ph 08	

Reaction mixture: (500 µl)

50 µl 10 x Buffer w/ mgCl
" 1 mM dntps
" M13 w/ gag region of HIV
10 µl = 10 x 10 = 100 pmoles
ph 07
10 µl (same For) ph 08 ?
2½ µl = 10 x 1.25 M/pml 12.5
Taq
327.5 dell$_2$O
500 µl total rxn volume

500.0
-172½
327.5

M. Allen (cont)

1) re-use voltage (same device) as on March 30 (ie 3.17 V + 98°C) at 0.2A

Do only 20 cycles

A) Standards

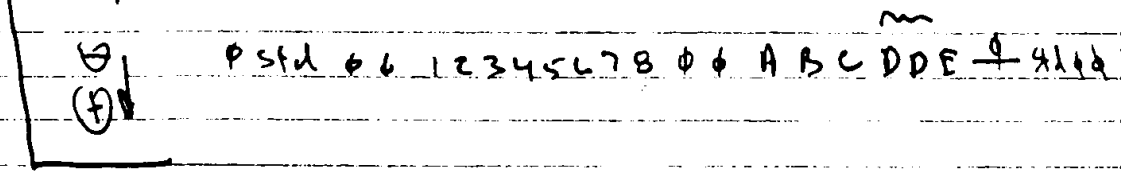
10, 10, 20, 20, 30, 30, 40, 40

w/ 50 µl oil (1-8)

B) Device 30 µl w ~ 90 µl oil

1-minute cycles at 3.17V
20-1 minute cycles (A-E) 0.2A

Electrophoresis — well-problem



1a) Had to re-solder device wire connectors after 2-cycles fix time ± ½ hour rxn was at Room temp

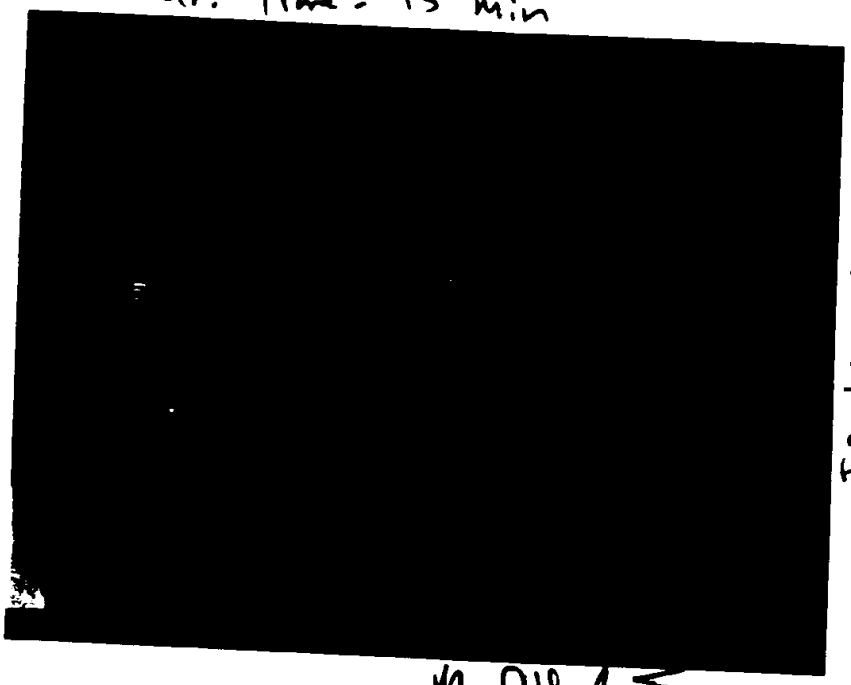
Results - ① formed product in both stds and in wells
② wells (and 1) std had less bright primer-dimers
③ device provided ~6-5 µl gel

See next 2 pages:

Cont results (photos)

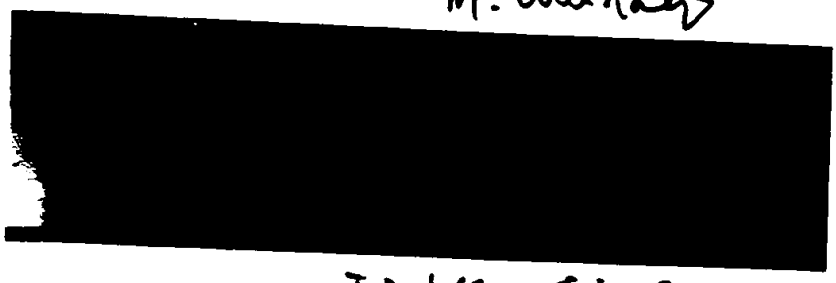
M. Allen

Electr. Time = 15 min



T = 1 sec 5.6 3200

M. Allen



T = 1 sec 5.6 3200

#1 Loaned to Mila Ching